

CLAIMS

What is claimed is:

1. A combustion promoter composition suitable for use in a fluidized catalytic cracking process, said composition comprising a component which contains (i) an acidic oxide support, (ii) an alkali metal and/or alkaline earth metal or mixtures thereof, (iii) a transition metal oxide having oxygen storage capability, and (iv) palladium.
2. The composition of claim 1 wherein said acidic oxide support contains alumina.
3. The composition of claim 2 wherein said acidic oxide support is selected from the group consisting of alumina, silica alumina, and lanthana alumina.
4. The composition of claim 3 wherein said oxide support is a silica alumina.
5. The composition of claim 4 wherein said silica alumina has an alumina:silica mole ratio of about 3-50:1.
6. The composition of claim 1 wherein said oxygen storage oxide contains ceria.
7. The composition of claim 1 wherein said component contains an alkali metal selected from the group consisting of sodium, potassium, and mixtures thereof.
8. The composition of claim 1 wherein said component contains about 1-10 parts by weight (measured as alkali/alkaline earth metal oxide) of said alkali/alkaline earth metal per 100 parts by weight of said acidic oxide support material.

1 9. The composition of claim 1 wherein said component contains at least about 1
part by weight of said oxygen storage oxide per 100 parts by weight of said acidic
3 oxide support material.

1 10. The composition of claim 9 wherein said component contains about 2 to 50
parts by weight of said oxygen storage oxide per 100 parts by weight of said acidic
3 oxide support material.

1 11. The composition of claim 1 wherein said component contains about 0.01-5
parts by weight of palladium per 100 parts by weight of said acidic oxide support
3 material.

1 12. The composition of claim 1 wherein said component consists essentially of
constituents (i) - (iv).

1 13. The composition of claim 12 wherein said composition consists essentially of
said component and said composition is in the form of particles.

1 14. A fluid cracking catalyst comprising (a) a cracking component suitable for use
in cracking hydrocarbons, and (b) a component which contains (i) an acidic oxide
3 support, (ii) an alkali metal and/or alkaline earth metal or mixtures thereof, (iii) a
transition metal oxide having oxygen storage capability, and (iv) palladium.

1 15. The cracking catalyst of claim 14 wherein said cracking catalyst comprises an
admixture of component (a) in particulate form and component (b) in particulate form.

1 16. The cracking catalyst of claim 14 wherein said cracking catalyst is a particulate
composition comprising integral particles which contain both components (a) and (b).

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1 17. A method of cracking a hydrocarbon feedstock into lower molecular weight
components, said method comprising contacting said hydrocarbons with a cracking
3 catalyst comprising (a) a cracking component suitable for use in cracking
hydrocarbons, and (b) a component which contains (i) an acidic oxide support, (ii) an
5 alkali metal and/or alkaline earth metal or mixtures thereof, (iii) a transition metal
oxide having oxygen storage capability, and (iv) palladium, at elevated temperature
7 whereby said lower molecular weight components are formed.

1 18. The method of claim 17 wherein said catalyst is fluidized during said
contacting and said method further comprises recovering used cracking catalyst from
3 said contacting step and treating said used catalyst under conditions suitable to
regenerate said catalyst.